

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) An image display method for displaying a monochromatic image of a predetermined color with a color display device in which a unit pixel is composed of R, G and B cells, comprising the steps of:

allotting a corresponding set of R, G and B data to each gradation of the monochromatic image having a larger number of gradations than a total number of gradations of the predetermined color that can be reproduced by each of the R, G and B cells in the color display device, by using sets of R, G and B data for the total number of gradations of the predetermined color and one or two sets of R, G and B data obtained by at least one of: changing only one of three R, G, B data input to the respective R, G and B cells and simultaneously changing only two of the three R, G and B data, when reproduction performance of each of the R, G and B cells in said color display device refers to the total number of gradations of the predetermined color represented by a total number of the sets of R, G and B data that are obtained by simultaneously changing by one the three R, G and B data input to the respective R, G and B cells in order to reproduce the predetermined color;

inputting the allotted corresponding set of R, G and B data to each of the R, G and B cells in said color display device; and

displaying the monochromatic image having a higher gradation resolution than the reproduction performance of each of the R, G and B cells in said color display device.

2. (original): The image display method according to claim 1, wherein one pixel of said monochromatic image is displayed using said unit pixel composed of said R, G and B cells.

3. (original): The image display method according to claim 2, wherein input data of said one pixel of said monochromatic image is allotted to said R, G and B cells of said unit pixel.

4. (previously presented): The image display method according to claim 3, wherein a minimum value and a maximum value of said input data respectively correspond to approximate minimum and maximum luminance values as obtained by combining said R, G and B cells.

5. (original): The image display method according to claim 4, wherein the maximum value of said input data is converted to a sum of values for R, G and B cells and used as a new set of input data.

6. (original): The image display method according to claim 3, wherein data for each of the R, G and B cells in said input data has been obtained by generally equal allotment.

7. (currently amended): An image display method for displaying a monochromatic image with a color display device in which a unit pixel is composed of R, G and B cells, comprising the step of:

displaying the monochromatic image having a higher gradation resolution than reproduction performance of each of the R, G and B cells in said color display device~~The image display method according to claim 3,~~

wherein one pixel of said monochromatic image is displayed using said unit pixel composed of said R, G and B cells,

wherein input data of said one pixel of said monochromatic image is allotted to said R, G and B cells of said unit pixel, and

wherein data for each of the R, G and B cells in said input data, if expressed by coordinates (x,y) on a CIE chromaticity diagram, is within a region bounded by coordinates (0.174,0.0), (0.4, 0.4) (where α is an x-coordinate of a point at which a spectrum locus crosses a straight line that is parallel to an x-axis and which intercepts a y-axis at 0.4).

8. (original): The image display method according to claim 7, wherein said input data and a mass of the data for each of R, G and B cells are used in 1:1 correspondence.

9. (previously presented): The image display method according to claim 1, wherein data for each of said R, G and B cells is allotted to data for a plurality of time-divided frames and the data allotted to each of said time-divided frames is used to perform time-divided driving of said R, G and B cells independently of each other to produce said monochromatic image.

10. (currently amended) An image display apparatus, comprising:

a color display device in which a unit pixel is composed of R, G and B cells;

a data allotting unit by which input data of a monochromatic image of a predetermined color to be displayed in on said color display device is allotted to R, G and B data for the R, G and B cells, respectively; and

a processing unit by which the R, G and B data of the monochromatic image obtained by allotment by said data allotting unit, is output to the R, G and B cells for display on said color display device,

wherein said data allotting unit allots a corresponding set of R, G and B data to each gradation of the monochromatic image having a larger number of gradations than a total number of gradations of the predetermined color that can be reproduced by each of the R, G and B cells in the color display device, by using sets of R, G and B data for the total number of gradations of

the predetermined color and one or two sets of R, G and B data obtained by at least one of:
changing only one of the three R, G, B data input to the respective R, G and B cells and
simultaneously changing only two of the three R, G and B data, when reproduction performance
of each of the R, G and B cells in the color display device refers to the total number of gradations
of the predetermined color represented by a total number of the sets of R, G and B data that are
obtained by simultaneously changing by one the three R, G and B data input to the respective R,
G and B cells in order to reproduce the predetermined color,

wherein said processing unit inputs the allotted corresponding set of R, G and B data to
each of the R, G and B cells in said color display device, and
wherein said color display device displays the monochromatic image ~~is displayed~~ having a
higher gradation resolution than the reproduction performance of each of the R, G and B cells in
said color display device.

11. (original): The image display apparatus according to claim 10, wherein said data
allotting unit allows a minimum value and a maximum value of said input data to correspond
respectively to approximate minimum and maximum luminance values as obtained by
combining said R, G and B cells.

12. (original): The image display apparatus according to claim 11, wherein said data
allotting unit converts the maximum value of said input data to become equal to a sum of values
for R, G and B cells.

13. (original): The image display apparatus according to claim 10, wherein data for each
of the R, G and B cells in said input data has been obtained by generally equal allotment.

14. (currently amended): An image display apparatus, comprising:

a color display device in which a unit pixel is composed of R, G and B cells;
a data allotting unit by which input data of a monochromatic image to be displayed in
said color display device is allotted to R, G and B data for the R, G and B cells, respectively; and
a processing unit by which the R, G and B data of the monochromatic image obtained by
allotting unit is output to the R, G and B cells for display on said color display device,
wherein the monochromatic image is displayed having a higher gradation resolution than
reproduction performance of each of the R, G and B cells in said color display device~~The image~~
~~display apparatus according to claim 10,~~

wherein data for each of the R, G and B cells in said input data, if expressed by coordinates (x, y) on a CIE chromaticity diagram, is within a region bounded by coordinates (0.174, 0.0), (0.4, 0.4) and (α is an x-coordinate of a point at which a spectrum locus crosses a straight line that is parallel to an x-axis and which intercepts a y-axis at 0.4).

15. (original): The image display apparatus according to claim 14, wherein said input data and a mass of the data for each of R, G and B cells are used in 1:1 correspondence.

16. (previously presented): The image display apparatus according to claim 10 further comprising a control means for allotting data for each of said R, G and B cells to data for a plurality of time-divided frames and performing time-divided driving of said R, G and B cells independently of each other using the data allotted to each of said time-divided frames to process said monochromatic image.

17. (previously presented): The method of claim 1, wherein said image data is based on an image being used for medical diagnosis.

18. (previously presented): The apparatus of claim 10, wherein said input data is based on an image being used for medical diagnosis.

19. (previously presented): The method of claim 1, wherein luminance values that are displayed with said unit pixel, are at least three times as many as those that are displayed with each of the R, G and B cells.

20. (currently amended): An image display apparatus, comprising:
a color display device in which a unit pixel is composed of R, G and B cells;
a data allotting unit by which input data of a monochromatic image to be displayed in
said color display device is allotted to R, G and B data for the R, G and B cells, respectively; and
a processing unit by which the R, G and B data of the monochromatic image obtained by
allotting unit is output to the R, G and B cells for display on said color display device,
wherein the monochromatic image is displayed having a higher gradation resolution than
reproduction performance of each of the R, G and B cells in said color display device.The
apparatus of claim 10,

wherein said apparatus provides a display at a maximum luminance of approximately 500
cd/m² - 5000 cd/m².

21. (currently amended): An image display apparatus, comprising:
a color display device in which a unit pixel is composed of R, G and B cells;
a data allotting unit by which input data of a monochromatic image to be displayed in
said color display device is allotted to R, G and B data for the R, G and B cells, respectively; and
a processing unit by which the R, G and B data of the monochromatic image obtained by
allotting unit is output to the R, G and B cells for display on said color display device,

wherein the monochromatic image is displayed having a higher gradation resolution than reproduction performance of each of the R, G and B cells in said color display device~~The apparatus of claim 10,~~

wherein said data allotting unit is in said processing unit, and said processing unit further comprises:

frame memories;

a data converting section; and

a switching section for sequentially outputting data stored in said frame memories.

22. (previously presented): The method of claim 3, wherein data for each of the R, G and B cells in said input data, if expressed by coordinates (x, y) on a CIE chromaticity diagram, is within a region bounded by at least three coordinates.

23. (previously presented): The apparatus of claim 10, wherein data for each of the R, G and B cells in said input data, if expressed by coordinates (x,y) on a CIE chromaticity diagram, is within a region bounded by at least three coordinates.

24. (previously presented): The method of claim 1, wherein the monochromatic image corresponds to a gradation resolution of N bits, and said each of the R, G, B cells corresponds to a gradation resolution corresponding to M bits, where $N > M$.

25. (previously presented): The apparatus of claim 10, wherein the monochromatic image corresponds to a gradation resolution of N bits, and said each of the R, G, B cells corresponds to a gradation resolution corresponding to M bits, where $N > M$.

26. (previously presented): The method of claim 1, wherein said color display device is a liquid-crystal display device.

27. (previously presented): The apparatus of claim 10, wherein said color display device is a liquid-crystal display device.